THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY

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SCIENTIFIC METHODS

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VOL. XIII. NO. 12: JUNE 8, 1916

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PUBLISHED FORTNIGHTLY

THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

All communications to the Editors should be addressed to PROFESSOR FREDERICK J. E. WOODBRIDGE, or Professor WENDELL T. BUSH, Columbia University, New York City.

Subscriptions and advertisements should be sent to THE JOURNAL OF PHILOSOPHY, Sub-Station 84, New York City. The annual subscription price (twenty-six numbers) is $3.00 and the charge for single numbers is 15 cents. Advertising rates will be forwarded on application.

The Journal of Philosophy, Psychology, and Scientific Methods is owned and published by Frederick J. E. Woodbridge and Wendell T. Bush, at Lancaster, Pa.

Entered as second class matter, January 19, 1904, at the Post Office at Lancaster, Pa., under Act of Congress of March 3, 1879.

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VOL. XIII, No. 12. JUNE 8, 1916

THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

PROFESSOR MACINTOSH'S PRAGMATIC REALISM

PERHAPS it is intrinsically no harder to write an adequate history of current philosophy than to write one about past philosophy. But the historian of the past has a great advantage. His victims are safely away, and their spirits come not back to reproach him for quoting verbatim what once they were incautious enough to have said. So much the more honor to him who takes the risk and writes of philosophers still alive, if he be in his work thorough and sincere. He will be criticized in turn, but the very denial and rebuttal will make issues clearer. I am led to speak thus by a recent attempt, made by Professor Macintosh, of Yale,[1] to review the whole current discussion of theories about knowledge. Being the result of an astonishing range of reading, and itself as readable, and even at times humorous, as the subject perhaps admits, it is likely to become a work of reference for busy students. For this purpose its citations, references, and indices well adapt it. But any such review has its dangers, its fallacies of accent, its failures of full sympathy, and the present work is no exception. This is perhaps the more noticeable where there is merely passing reference to a lesser philosopher, though sometimes it appears in more important passages. I make no pretense, however, to a more omniscient scholarship than Professor Macintosh's, and here purpose rather an examination of what he has positively to offer as his own constructive theory.

This positive contribution, by the plan of the book, is forced back towards the end, but the criticism which precedes occasionally turns on it, so that the reader has the same impression as from a long German sentence with the verb at the end. Professor Macintosh announces himself a non-dualist realist and a pragmatist; and his criticisms grow in interest as he approaches views similar to these. Thus, in the earlier and long section on immediate knowledge, his enumeration of dualists who ought to be agnostics, and of idealists, whose menagerie of Absolutes shows a hereditary taint, becomes, if

[1] Macintosh, D. C. "The Problem of Knowledge." Macmillan. 1915. Pp. xx + 503.

read continuously, something akin to the Homeric "catalogue of the ships." Professor Macintosh omits scarcely any one who writes in English, French, or German (I note Santayana and a few Frenchmen), though the discussion of Hocking shows how much more illuminating a detailed treatment of a few typical examples might be. And when he arrives at the new realists, his discussion, though more varied, centers about secondary qualities. For the whole exposition is intended to lead up to his own theory as to secondary qualities: a theory which is to be a happy combination of tradition, science, philosophic critical inquiry, and common sense, and which shall settle the problem so completely that the problem itself will cease to exist.

The theory proposed is somewhat as follows. Idealists and new realists are right, as against the dualists, in saying that knowledge may bring us directly into contact with reality, but they are wrong in saying that this contact, in the case of a physical reality, occurs in our acquaintance with secondary as well as with primary qualities. No, the primary qualities alone are objective. But primary qualities were not perceivable by themselves until the soul, in animal and man, enriched them by fusing with them secondary qualities of its own making. It is much as when the microscopist, unable to distinguish the parts of his histological preparation, puts a stain upon it which is such as to affect some parts only, thus bringing them out against the background of the unstained portions.

This theory is a clever suggestion, but I fear the author claims for it too much. He calls it critical realism, as against the dogmatic realism which treats all qualities alike. I gather that dogmatic realism is any realism which needs to be criticized, and critical realism is that form which can afford to be dogmatic. For he fails to apply his own arguments to it. Take an instance in point. Professor Macintosh (pp. 246 and 266) criticizes Wolf for attempting to distinguish between the perception of a thing, as receptive, and the perception of an hallucination, as creative. These, he says, are, as mental processes, "essentially identical in kind. If there is creativeness in the one, there is creativeness in the other." Yet just this "untenable compromise" does Professor Macintosh himself propose, when he would distinguish—"where psychological science finds an essential identity"—between the sensing of primary and of secondary qualities. And is it the case that an hallucination contains no primary qualities, and what of primary qualities as seen by aid of microscope or mirror, or seen in dreams? Doubtless we can "learn to ignore" (p. 326) or "easily correct" the illusions about primary qualities, but how can there be primary-quality illusions at all? Or does Professor Macintosh mean the primary qualities never are

sensed, and if so, why is this theory called "epistemological monism"? The next step might well be to play a Berkeley to Professor Macintosh's Locke. Indeed M. Bergson has already done it: explicit extension, though suggested by the vague extensity experienced, is, in its clear-cut form, the product of intellect, and created for purposes of action!

Or again, Professor Macintosh holds (p. 238) there is self-contradiction in the opinion of Moore and Nunn that an object may have two colors at once,—though the case of "luster" might have suggested a doubt. Yet he admits the different colors seen are in the object—he tells Professor Fullerton (p. 247) that there is no dispute on this point—only not "independently" there. If "not independently" means "not really," Professor Macintosh has the contradiction; if it means "really there," but only "under conditions," why is the "dogmatic" realist's opinion more contradictory? Nunn, indeed, says the physical eye is not one of the conditions, or seems to say so, but this aside, just what is the difference? Some "dogmatic" realists prefer to say "functional relationship" rather than "causal condition," but they generally admit the object really has a different color in daylight than under artificial illumination. Only, the "dogmatic" realist does not include among the conditions a mind. That is, he says that under certain conditions there arises a color quality in the object; Professor Macintosh says that under these *same* conditions, the *same* color arises in the object—put there by the creative activity of a mind. The issue then is: Is this king, brought in to do nothing but sign the speeches his prime minister has written, not a personage with whom we might, by Professor Macintosh's favorite "principle of parsimony," dispense? "Dogmatic" philosophers generally avoid such conceptions as "creative activity," because such conceptions explain everything, and would explain everything equally well if it were different from what it is.

All else that Professor Macintosh has to say about realism seems to add only a little to his thesis, some of the more apparent defects of which we have just been considering. Thus he accuses new realists of hypostatizing abstractions, which I think is in some cases true; but he gives us little on the questions really troublesome about universals and relations. Thus he says—discussing (p. 332) the "externality" of relations—the change made in the object by the knowledge relation may be, for the purpose of that knowledge itself, unimportant, and hence the knowledge relation may then be considered external. He generalizes this by saying (p. 49): "If the relation makes a difference in the object for our purposes, it is, for us, a relation internal to the object; if it makes no difference, it is external."

The idealists come, at least verbally, very near to Professor Macintosh at this point, when they say that all relations "make a difference" to their terms, but "for practical purposes" we may sometimes neglect these differences. But Professor Macintosh, however, seems further to hold that only causal relations are "objectively" internal. Does the above reference to purpose mean that some purposes are such as to take into account the relation in question, while other purposes have occasion to consider only the term related, without considering the relation? Then, in the former case the relation might be denominated "internal *to the purpose*"—but who ever denied it?

The great difficulty in this question of "externality" of relations is to find exactly where the issues join, what the problem is. One side says that even the believer in atoms and the void admits that each particle attracts every other, and is thus a monist. Whereupon his opponent replies that the attraction does not alter the interior of the atoms, and the attraction of any two is independent of any third body, hence pluralism. And so it goes. Mr. Bertrand Russell describes the "external" theory, saying, "Relatedness does not imply any corresponding complexity in the *relata*,"[2] but everything here turns on the interpretation of "corresponding." When restated[3] as denying that "every relation is grounded in the natures of the related terms," even Mr. Russell's favorite example of "difference" seems to tell against it. For is not even the numerical difference of any *A* and *B* founded on each being an individuated numerical unit? And when we consider qualitative difference, surely Mr. Bradley was wise in choosing it as his best example of the "grounding of relations in the natures of the related terms." Mr. Joachim cheerfully disposes of all cases to the contrary by saying they are not relations at all, they are mere "coincidences"![4] But even if we decline to follow Mr. Joachim, we must admit Mr. Russell's own cases tell against Mr. Russell. But the Bradley contention is scarcely a whit better. For while it may be that red and blue are different because of the "natures" of the two, yet I can scarcely believe blue would be less blue to him who had never dreamed of red. Yet that the two are what they are only as distinctions within a whole that includes them—such is what Bradley is trying to prove.

There is some gain if the issue of monism-pluralism is transposed to the field of one relation only, the whole-part relation. But the two sides again fail to convince one another. For instance, Mr. Bernard Bosanquet seems well satisfied with his own conclusion in

[2] This JOURNAL, Vol. VIII., page 158.

[3] *Aristotelian Society Proceedings*, 1906–7. New Series, Vol. 7, page 37.

[4] *Mind*, 1907, New Series, Vol. 16, page 412.

this respect: he tells us[5] it is "an insight substantially just" which he himself possesses, and on which true idealism is founded, that a mind is a whole, its objects always fragments. Yet verbally this might be admitted by many a pluralist realist. It is true the realist might then add an explanation less pleasing to Mr. Bosanquet, that a whole is dependent on its parts in a way in which the part is not dependent on the whole, and if the "things" of every-day thinking are in some respects fragments, it does not follow they are fragments of mind. The worst contradictions modern logic knows anything about have arisen through efforts to define a part in terms of the whole of which it is a part—compare the problems leading up to Russell's "theory of types"—and those of us who have considered these are cautious even about "insights substantially just." But of the complexity of all this, and the present anarchical mess resulting from attempts to defend a thesis rather than to inquire, Professor Macintosh gives us scarcely a hint.

Before leaving the topic of "immediate knowledge," perhaps I might venture a word as to the sense in which, it seems to me, the qualification "critical" is best employed of a realist philosophy. Suppose the mind of a weak individual person placed amid a very big world. It is almost infinitely improbable, is it not, that what came to its notice first should be anything important or fundamental? Surely, then, such a mind had needs be critical; with that which first comes before it, it ought to be dissatisfied; even as the absolute idealist says: "The immediately given must suffer mediation." M. Bergson tells us that to understand reality, we must needs plunge into it. Though metaphors are but metaphors, I should prefer to say we had better stand back from it, get far enough away to overcome the tyranny of the foreground. Now this sort of mediation, called for by the realist's own presuppositions, may involve elaborate thought; but the resultant good knowledge may, nevertheless, when we get it, be immediate and not "saturated with thought," be a new contact of ours with what is, and has been, fundamental in reality. To insist that thought must, by such mediation, be woven into reality itself, is like arguing that what I have had to reach by a long road must be far away from me when I get it. The process of mediation is not a process of helping the Absolute make the stars and Milky Way; it is a much more pedestrian and earthly activity—cleaning our lenses, placing and focusing our telescope. I am not sure a mind may not succeed in being creative in the sense of muddling its immediate surroundings and defeating itself, or even in the more useful way which Professor Macintosh postulates—these are hypotheses which might be

[5] B. Bosanquet, "The Distinction between Mind and its Objects." Adamson lecture at Manchester University, 1913, page 38.

subjected to some sort of scientific verification. But the best creative mediating activity in knowledge is in the direction of depersonalizing it, and calming one's own self-assertiveness. This is the critical attitude. And I care not if, in saying what I have just said, I seem to be defending that "outworn" opinion that theory is antithetical to practise and epistemology distinct from metaphysics.

We may now turn to Professor Macintosh's section on "mediate knowledge," wherein "mediate" is used in another sense from that just mentioned, and has reference to representative knowledge. The problems of truth and of proof are here treated, again with collation of many views, but with especial sympathy for pragmatism.

I remember having read Professor James's book "Pragmatism," near the time of its publication, with great satisfaction. What I read there was a method of handling *conceptual* knowledge, a method which, as I understood it, said that of any two theories about the actual world, neither in violent disaccord with known facts, the one of the theories was to be preferred which was the more detailed, the more specific, the more capable of further verification. It was to be the more detailed in the sense that it told more of the "particular go" of things; the more specific in that it would fit one set of facts, but would not fit any other imaginable set equally well. But lest we should become scholastic in our multiplication of details, we were to say that no detail was anything more than a verbal distinction unless we could find, or definitely define in terms of factors known to exist, a situation wherein some one would have different direct experiences or be obliged to act differently because of that detail,—of the detail itself, not of its expression by us. This seemed to me good, and capable of application to many theories popular among philosophers, and I announced I was a pragmatist. But behold, I learned from friends who were worried about my spiritual welfare, that in calling myself a pragmatist I had committed myself to the doctrine that there is no solid fact anywhere, "I believe what I like and you believe what you like." What became of my unhappy "pragmatic method," I know not to this day. But, nevertheless, I still read with hopeful interest what pragmatists have to say, though now they all talk only about definitions of truth. Professor Macintosh has one of these definitions of truth to offer, which says that judgments are working hypotheses, used instead of immediate knowledge, and true if, whenever we ought to use them, they lead us to perform the same actions as immediate knowledge would. This theory he calls "representative pragmatism."

I wish to praise, first, that side of Professor Macintosh's "representative pragmatism" which seems to me very good. Whatever it

may be that makes up a judgment, we do make it for purposes, and it is representative of a reality we do not now have. It is well to call a judgment a "working hypothesis"; if we call it simply an "hypothesis," this would suggest that the purpose for which we made it was verification, whereas, in general, we make a judgment just precisely to save ourselves from seeking out that reality for which it stands. Its analogy with a financial credit has been well used to illustrate these points. If I have credit, it is something which could be turned into cash, but that is just what I usually do not want; and though, of course, there are times of inflation when turning into cash would be impossible and times of depression when efforts are made to turn everything into cash, the better situation is neither of these. And no financier has yet postulated a financial Absolute, whose duty it is actually to turn all my credit into cash; such an Absolute would be the embodiment of a financial panic. The granting of a new credit is frequently intended to stabilize the already existing credits, like one of Professor Dewey's mediating "ideas." The great purpose of credit is efficient economic action. The function of judgment is analogous to these functions of credit, but the stuff and structure of judgment is, of course, noetic and not financial.

Just what, then, is the structure of judgment? Professor Macintosh says it is the representation of reality by idea. Let me illustrate his actual use of this thesis by an example. Suppose Professor Macintosh is looking for cherries. He says to himself, "cherries are red," and thence infers, "I seek something which is red." With this in mind he looks for red objects and ignores green and blue. In his search he may have no occasion to recall that cherries are red only on the outside, and only when ripe, and in normal light with normal vision. In short, what Professor Macintosh is telling us is that we can call the judgment, "cherries are red," true, even though it be vague to the extent of omitting a qualification; such, for example, as that cherries are red only on the outside, provided we never appeal to the judgment in any situation where that qualification would make a difference to our actions. If this is what he means, I welcome it. And it seems to be the sum total of what he does mean.

But is this an account of the representative character of judgment? On the contrary, what is representative in the above example occurs only in the inferred judgment, namely, the description, "something red." And in this connection, has Professor Macintosh ever heard of, for instance, Mr. Russell's "theory of description"? But in making the judgment, "cherries are red," where "are red," as a unit, is the verb, the maker simply does not mean that "redness" represents "cherries." He may infer, "cherries are

red objects," where "are" is indeed the verb, but it indicates not representation, but class-inclusion. In scarcely any case does the verb "is," properly understood, mean either representation or identity. I wish Professor Macintosh had given more explicit chapter and verse when he accuses intellectualism of being unable to state how the subject can *be* the predicate (p. 400). It certainly does not apply to any present-day logician whose opinion is worthy of consideration, unless it be some of the idealists.

There is a remark made by Professor Macintosh which would really bring him much nearer the deeper analysis of judgment than would this borrowing from Bradley of the thesis that judgment applies a predicate to reality, but the remark in question is his final conclusion, not further developed. Truth, he says (p. 452), is satisfactoriness "in all situations calling for decision between the judgment and its contradictory." But this decision is the act of judging itself; the "judgment" here mentioned had best be called the proposition, though "proposition" is unfortunately also used both of the statement in words and of the objective fact, as well as of the content judged. An act of judging is, indeed, like a moral decision; it is the culmination of a process wherein an alternative gets more or less clearly discriminated from other alternatives; and is a decision finally rendered, accepting or rejecting. As Mr. Russell's pupil, Ludwig Wittgenstein has stated it, in speaking of judgment at its highest development, a proposition is a bipolar thing; it and its contradictory are not separate, but are like the two ends of a balance; if you push down the one, you raise the other. You understand it only when you understand both sides; you judge when you claim the one side is to be accepted and the other rejected. Of course, you only *claim* it true, your decision can not make it true, and in that sense it remains a working hypothesis; but the existence of just this *decision* is what distinguishes a judgment from an ordinary working hypothesis. The bipolarity is what distinguishes proposition from fact, and makes it not a mere tautology to judge, even when the fact is immediately before one.

This brings me to the last topic I wish to mention, namely, our knowledge of possibility. If the judgment is a decision, there must have been put before the mind possibilities, finally narrowing down to two, which are such that only one of them can be real. A judgment involves, therefore, a comparison of what is with what *might be*. And if it is to be used as a working hypothesis, it must, as Professor Macintosh says, lead us to perform the same actions as would direct knowledge of the reality judged about, hence again comparison with what *might be*. You can not escape such comparisons with what might be.

Possibility is an ambiguous word. It may refer to my ignorance (as in, "It may have been so"), or to existential possibility (as in, "Is it possible for this described object to exist?"), or to qualitative possibility (as in, "What would be the character of this object, if it did exist?"). *Existential* possibility admits of degrees, from "really possible" down to "barely possible" or "impossible," and is probably always directly based on some characteristics of what actually exists, so that its equivalent could be stated in terms of propositions about what is. Verifiability involves possibility in this sense. As for qualitative possibility, though the *description* of such a qualitative possibility is necessarily composed of known existents, the qualitative possibility itself is not existent in any realm. Only the description is real; nevertheless, we can and do consider such possibilities also. They are no more to be identified with "nothing" than with any existent thing; their positive character is perhaps to be found in some connection of universals. We consider qualitative possibilities always and only in *comparisons* with what is. We may mistake which is which, and that is an erroneous judgment, but not nonsense. It avails nothing to postulate the erroneous as real in some universe of fictions; our error lies in judging it real in a universe where it is not real, and its being real there can not be actualized anywhere. It is vain to try to escape the describing of the possible; and the problem of the structure of judgment is the problem how this description is existentially possible.

In the closing sections of Professor Macintosh's book, he defends the plausible thesis that the method of scientific proof can dispense with neither deduction nor induction. But in doing this, he makes what seems to me a quite unnecessary attack on the existential possibility of studying qualitative possibilities, with especial reference to sciences of the hypothetical, such as pure mathematics and logistic. He finds apparently some contradiction between such a statement of fact as, "This man was a traitor," and the statement of a qualitative possibility such as, "If he had been loyal, we should have honored him as a patriot." But Professor Macintosh has a particular animus against non-Euclidean geometry and Cantor's transfinites. His zeal even outruns his discretion. Let me quote (p. 467) concerning transfinites: "But we know, by intuition capable of enduring the severest criticism, that there can be no such [infinite] collection. Other conditions remaining the same, 'adding to' involves 'increasing'; and so the definition [*i. e.*, an infinite collection is such that adding to it would not increase it], *when the meaning of its terms is considered,* is seen to be simply self-contradictory." Let me paraphrase this. "A boy can not grow tall without also growing

fat, because we know by an intuition capable of enduring the severest criticism, that it is self-contradictory for a thing to become larger without becoming bigger." What the theory of transfinites says is that a collection can be increased in two distinct ways, and sometimes the usual sort of increase may occur without the other sort. But to return to the main issue: no mathematician intends to assert or deny there exist an infinity of things in the world, but he can nevertheless examine the possibility. He can further compare such possibilities with one another and with what is empirically known to be actual, and he finds such comparison very illuminating. And as to whether he does thus find such comparison profitable, he is the one best able to judge. So why should we worry about it?

But for my part, and concerning possibility in general, I should say that one of the greatest privileges of the human mind, and peculiarly of the philosophic as of the artist mind, is to be able to rise above the world as it is, and compare what is with what might be and might have been. This is not romancing, and it is not easy, though we try it in even the simplest judgment we make. It is not conceiving possibilities for their own sake, but only for comparison, that we may the better understand the world as it is. It requires knowledge in its highest discriminative power, and is seldom very fruitful, because of our unfortunate ignorance, in any but the most abstract sciences. But the praise of such comparison is the key-note of present-day rationalism, and I am glad to call myself a rationalist in that sense.

H. T. Costello.

Columbia University.

THE DEMOLITION OF UNREALITY

On the negative side, man's intellectual progress has consisted in the exorcising, one after another, of superstitions; on the positive side, in the discovery of facts and of fertile conceptions. And if the condition of stable advance is that these two should go hand in hand, each assisting the other, we may take it that the cause of philosophy will be served by the removal of certain profitless notions as well as by the revelation of positive features of the universe. It is to a task of the former or negative sort that we here address ourselves. We shall consider an old and apparently influential notion of metaphysics, viz., that of unreality; and we shall endeavor to abolish it utterly.

This concept, I declare, is mere deception. If duly examined, it will be found to be self-destructive; it takes away what it furnishes and cancels itself out. In its pretentiousness it is a dead weight upon

the mind, claiming attention, but delivering no information and explaining nothing. Berkeley, it has been said, demolished the conception of corporeal substance, Hegel the thing-in-itself, Kant the soul-substance, and certain modern thinkers, perhaps, the psychical content. It may be that this is not wholly true; but I do indeed claim that "unreality" displays all the reason of non-being that these categories ever appeared to do. It is the case *par excellence* of pure nothingness.

As "unreal" is the contradictory opposite of "real," let us approach our object by considering the latter notion. What then does "real" mean? Now it seems fair to say that reality is *either* the same as Being in the most general sense of that term, *or* is a certain sort of Being, a species within the genus. By Being in the most general sense, I mean something which everything possesses: everything. at least, which can be identified as an integral object of thought. So ubiquitous a property can hardly be further defined; it is practically equivalent to "presence." The King of Utopia, mermaids, wooden iron, as well as the sun, moon, and stars, or you and I, all have Being in this meaning of the term. But the last five have reality, we say, which the first three have not. Accordingly, reality would seem to mean, not merely Being in the widest interpretation, but a very special kind of Being. Since it is then specific, it is something that can be defined; indeed in the opinion of most philosophers, it is their main professional task to ascertain the definition.

Now let us suppose that the definition were found. Let it read thus: to be real is to be $f(x)$, and not to be $f(x)$ is to be unreal, though still, in the general signification of Being, to be. As a fact, the different philosophical schools do believe themselves to have found the definition, and each fills in the $f(x)$ in its own way. To be real is to be the single whole of experience; to be real is to be a universal type; to be an independent object; to be fulfilment of a purpose; to be thoroughly rational; to be in the spatio-temporal world; etc.—these are some of the answers. Notice, now, that every one of them defines reality by a certain *character;* whether a quality or a relation or system of relations. It is as if we said, "to be real is to be blue." But why should blue be more real than red? What is there about wholeness, or universality, or purposiveness, or space, or time, etc., that makes them more real than partiality, or particularity, or aimlessness, or the non-spatial, etc.? If we stop to think of it, there is an absurdity lurking in *any* definition of reality. Definition is by relations and qualities, by essence rather than Being; the minute we make predications we leave the sphere of Being and go over to that of character. But reality is a fulness of *Being,* not a character; for any

character you please may be imagined and may remain merely imaginary. I can think of a universal type, a satisfied purpose, a space-and-time world; but the question, whether there *is* such an entity, is to be settled only by empirical investigation. No character is enough to confer Being; *a fortiori,* no character is enough to connote that acme of Being, reality.

It is in this case as with other fundamental dualisms. You can not by multiplying universals define the individual, nor by adding individuals define the universal; you can not by adding finite quantities get the infinite, nor by dividing the infinite evolve the finite; you can not by heaping together potentialities produce something actual; you can not by adding points make up a line, nor by dividing a line reach a point; you can not draw from a static world, however complicated, the element of change, nor from change the static. No more can you, by any manipulation of characters, produce that unique thing we designate by such terms as being, existence, actuality, or reality. Of all these dualisms it is true that the one member may approach the other; but the relation of the members, in each case, is one of limit to series approximating the limit.

We have spoken of reality as a fulness or acme of Being. But does not this beg the point at issue by tacitly identifying reality with one member of the pair "Being-essence" and excluding it from the other? No, we answer; for reality is by common consent a sort of Being. Even supposing it were to consist in the addition of a certain quality to Being—say blueness, for one quality is here as good as another—still that quality rather than some other would be satisfactory only because it had a certain existential flavor about it. If blueness were a mark of reality, then it would be so because blueness is somehow closely allied to Being, while other attributes are not so allied.

In short: if reality is a special kind of Being, rather than "Being" used in the widest sense, then reality becomes Being *plus* a certain character. But as no character is fitter than any other to be attached to Being, this union is quite arbitrary. Which character is joined with Being to constitute reality, will depend upon external motives. And the history of philosophy shows this. One class of thinkers feels the material world to be the solidest or most important or best known realm of Being, and it proceeds to define reality as material Being; another class, struck with the perduring quality of the universal types, defines reality as that sort of Being—and so on. But none of these attributes which is added to Being has any *intrinsic* connection with Being. We must conclude that the attempt to define reality as anything more than Being in the widest sense is doomed to failure.

If reality means any sort of Being—and it must be some sort—then it is just bare Being, in the most general meaning of that term.

Before applying this result to our main theme, we must notice that we may seem to have been unjust to the Hegelian definition of reality. That definition, and perhaps that alone, *has* a criterion by which it finds Wholeness intrinsically connected with Being; viz., consistency, or absence of self-contradiction. Anything less than the whole universe is declared to be infected by the "dialectical" contradictions. Now we need not raise the large question of the justice of this declaration. If the partial and the finite are inconsistent, and if consequently the Whole alone is consistent, then the latter alone is real. If, as Hegel thought, the particulars show their inconsistency by passing away in time, they are so far unreal—after they have passed away. But this is not a positive property or quality; it is simply that the partial and the finite cease to be. The notion of reality which is here employed is just the simple notion of Being in the general sense. That which is condemned as unreal is that which annuls its own Being, and that which is approved as real is that which does not annul, but preserves, its own being. Reality here means no more than simple Being, after all. The self-contradictory is the Being which denies itself, and the consistent is the Being which does not. The apparently qualitative criterion of consistency is then no true quality or character, but just the fact of undestroyed Being. And with this we may apply our result to the main theme of the notions of unreality.

If reality means just Being, in the widest interpretation, and no more, then unreality means non-being. Now everything positive that you can think of—and Heaven knows how much else—has Being in that very universal sense. It is something or other, even if only a fiction; and in order to be something or other it must first, in that sense, be. If then everything whatsoever is, it can not be unreal; it can not not-be. So asserts the law of contradiction. Unreality, in fine, is a self-destructive notion. It is just that which the law of contradiction excludes from the universe. To call anything unreal is to say that, though it has being, it is not. And herewith, I submit, the notion of unreality is demolished. When people speak of unreality, they are uttering a paradox and a misnomer; the alleged unreal thing is not unreal, but is in the wrong context, or insignificant, or valueless, etc. The consequences of our result, for the problem of error are, I think, momentous, even startling; but only one of them need be stated now, viz., that error is not, as Professor Montague has said, belief in an unreal object. For there are no unreal objects.

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THE PREDICATES REAL AND UNREAL

IN the course of experience we find that the terms real and unreal are constantly applied to very diverse objects under a great variety of conditions. We say jewels, old masters, and money are unreal. We speak in like terms of moral qualities. The sympathy manifested by an enemy is unreal, that of a friend real. Again, the recantation of a Galileo is unreal, the conversion of a Newman real. Turning to science the same distinction is found. Color is not a true representation of reality, hallucinations are not real objects. The very procedure of a discipline itself is subject to the classification. This was not a real test, or that was not a real experiment, are phrases frequently used to characterize work in these fields. All sorts and conditions of objects are constantly being brought under these categories.

These illustrations show that the categories "real" and "unreal" are habitually used, and hence must have some definite connotation. Nor can they be considered as equivalent to "being" and "non-being." For in some sense, all the objects mentioned above *are*, no matter what their status in regard to being real is. Professor Sheldon, in the preceding paper, attempts to demolish the conception of unreality, pointing to the fact that we have relegated such ideas as substance, etc., to the sphere of outgrown superstitions. But what has actually occurred is that we have come to know what substance is in terms of experience. We have not done away with it, but learned to state what it signifies. Inasmuch as things are constantly being classed as real and unreal, the task of the philosopher consists, not in doing away with the distinction, but in determining just wherein the distinction resides.

In pursuing the task of determining what the terms mean in experience, we shall take as illustrations cases where they are used and others where they are not, and, by a method akin to induction, isolate the characteristics of the former. I go into a jeweler's shop and buy certain stones as diamonds. They are later proved to be glass, My former judgment that they were jewels has been shown to be false. Under these circumstances I pronounce the stones unreal. Yet in another sense they are real, *i. e.*, they are glass. Contrast this with the following instance. A certain chemical is presented to me for analysis. From its appearance I am inclined to believe it a calcium salt. But further testing shows that I was mistaken, and that my initial hypothesis was incorrect. But I do not on this basis judge the substance unreal. It is a compound of a different character from that anticipated, but not unreal. Or here is another pair of illustrations. A man has an hallucination. As soon as he perceives it to be such, he

immediately declares it to be unreal. But an alienist interested in the case would pronounce it real. On the other hand, in a fog what seemed at a distance to be a man turns out to be a tree. Still the tree is not unreal, but a tree. It was quite different with the hallucination, which not being the experience of a physical object, is unreal.

When we examine these instances we note a number of points.

1. In the first place the predicates real and unreal can both be applied to the same object at the same time from different points of view, or at different times from the same point of view. The hallucination is a reality to the physician, an unreality to the patient. The stones accept both universals. It is quite clear from this that the judgments are not made, owing to the fact that the objects possess any particular properties. As hallucinations and glass, things are hallucinations and glass and that is an end of it. The nature as such of the objects is not responsible for the judgments concerning their reality. Any kind of a thing may, on occasion, be described from this viewpoint. It follows, therefore, that Professor Sheldon's statement that reality is either being as such or being of a certain kind is invalid.

2. In all the illustrations cited, some claim to a particular nature was made. The stones masqueraded as diamonds, *i. e.*, the conditions under which they were bought, certain aspects of their appearance, etc., all led to their explicit assignment to that class. The hallucination, due to its sense vividness and what not, was looked upon as having the properties of a material object, *i. e.*, as offering resistance, displaying certain kinds of activity, etc. The supposed calcium sulphate made a claim to a certain status which was at least tentatively accepted. And the tree suggested a man. In all cases, the attempt to appropriate a specific character is made by the object.

This fact would lead nowhere unless the attempt to operate on this suggested belief were made. This calls either for action on this basis or for judgments which are then submitted to the process of verification. If these work out as expected, no judgments of reality or unreality are returned, provided there has been no doubt raised as to whether the initial assumptions were correct. The stones merely continue to be accepted as diamonds, and the chemical as a certain salt. If my judgments of their character are never challenged, I shall accept them for what they seem as long as my further activity is successful. Suppose, however, that my initial hypothesis is for some reason brought into question. This may happen for diverse reasons, the mere recognition on my part of the purely tentative nature of the idea being sufficient. Further investigation shows that the stones are not diamonds, and the substance not a calcium salt. Now the falsity of my initial judgment does not lead to the declaration that the objects of them are unreal. For while we do ascribe this predicate to

the pseudo-jewels, we merely declare that the compound posseses a different nature from the one claimed. It is barium, not calcium, but no question of reality or unreality is raised. Again, had the initial statements been substantiated, the diamonds would have been real, but under like conditions the calcium would have been calcium, not real.

It follows from the above that the truth or falsity of judgments based on the claims of objects to a certain status is not as such the basis of the predication of reality or unreality. The latter concerns the subject-matter of a judgment, while truth and falsity are properties of judgments. Judgments are true or false, while things are judged real or unreal. Nor are the two factors so related that any one-to-one correspondence can be set up.

3. Though the fact that the diamonds are unable to substantiate their pretensions does not *per se* lead to their being judged unreal, still it undoubtedly has something to do with the matter. What then is needed in addition if objects whose appearance has or has not been misleading, are to be dealt with in terms of reality. Returning to our illustrations, the great difference stands out as one of value. The diamonds are interesting to me only as diamonds. As glass they can not be worn, they are not a suitable gift, they are like countless other bits of stuff which I ignore. It is only in their rôle as precious stones that they appeal; it is only their apparent character that is of value. Their failure to meet expectations renders them matters of indifference to me. Bad money is unreal because it pretended to be a medium of exchange, and since it is not such my interest in it vanishes. Another way of putting the matter is to say that only as jewels or as specie could the objects be factors in guiding my actions. As glass and lead they no longer figure in the existing situation as items in my procedure. They are simply non-existent for my plans. My interest in them may be reawakened subsequently, they may later aid my purposes, but for the situation in which they were to have played a part they have become non-entities. The same holds true in the case of the hallucination, for, short of the status of physical object, it is a matter of indifference for my present actions what it is, a product of diseased sense organs or what not. But for the alienist, that it is an hallucination is the vital matter, and the maintenance of this character in the face of additional experience makes the predicate "real" applicable. If it had been a true perception, it would have fallen outside of his province and been valueless to him. But the sodium sulphate was not judged unreal, because the interest lay in the constitution of the body, and its seeming specific character was an hypothesis, the truth of which did not exhaust the values of the stuff. If it turns out to be calcium, well and good. If it turns out to be another element, well

and good. The particular character of the reaction which would have been forthcoming had it been the former will now be changed, but in its new rôle it is still a factor in the situation. I shall alter the reagent which I was about to add, etc.

We reach, then, the following conclusion as the result of the analysis given. When a thing makes claim, however tentatively, to a certain character, and is of value only in so far as it possesses that character, the validating of this claim will lead to its being judged real, the invalidating to its being judged unreal. On the other hand, provided this particular nature is not the exclusive point of interest, the result of the further testing does not lead to the raising of the question of reality one way or the other. The truth or falsity of the initial hypothesis is not as such responsible for the application of the additional predicates. The judgments were correct or incorrect, and that is all there is to it.

Another way of putting the matter is to say that reality and unreality are evaluative terms. This has two important results. In the first place, the old problem of being as usually conceived, is meaningless. The determination of the ultimate character of reality, the accepted task of the metaphysician, is a useless quest, for reality is nothing, has no character, but is merely a generic term for the fact that in experience many things are evaluated in a certain way, that certain value judgments take place. The distinction between appearance and reality as usually stated vanishes, for they are relative terms, not absolute. On the other hand, contrary to the opinion of Professor Sheldon, unreality can not be demolished. Like substance, it can merely be defined. Unreality in any absolute sense vanishes, for it should never have existed. But that things may have the value of being unreal, as they may have the value of being good or true, is proved by every-day experience.

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TELEOLOGY IN COSMIC EVOLUTION: A REPLY TO PROFESSOR WARREN

IN a recent essay[1] Professor Howard C. Warren has touched on the problem of fitness of the environment and, while analyzing what he takes to be the logical foundation of a belief in the teleology of inorganic nature, has associated with my writings certain arguments which he easily shows to be fallacious. His principal comment is to be found in the following lines: "There is, however, a fundamental

[1] This JOURNAL, Vol. XIII., pages 65, 66.

scientific objection to this mode of reasoning. Admitting that inorganic conditions are peculiarly suitable to the maintenance of life as actually constituted, it may nevertheless be argued that under a different set of inorganic conditions a different type of organism might have arisen for which those alternative conditions would have proved just as favorable." In addition Professor Warren objects that inorganic teleology is founded on particular rather than on general facts or considerations and, further, that unfitness is never taken into account.

I can not help thinking that my critic has been hasty in supposing that any man of science, approaching this subject from the frontiers of physics and chemistry, could to-day hold such silly views. However that may be, these are not my opinions; and without entering into a profitless discussion of the responsibility for Professor Warren's misconception of my conclusions upon this subject, which may very well be either mine or his, I am anxious to point out the facts which he has overlooked, and thus summarily to make out what I conceive to be the true case for inorganic teleology.

Putting aside all vain speculations about other possible worlds in which matter may have different properties and energy different forms, we can see that in the course of cosmic evolution water and carbon dioxide have necessarily found a place on the surface of the earth. Under these circumstances the properties of the two compounds and of their three constituent elements have caused these substances to be the principal factors in both geological and organic evolution.

The first fact to be noted is that these properties make up a unique ensemble of singular physical and chemical characteristics. Thus the latent heat of vaporization of water is the highest known latent heat of vaporization, the solvent action of water the greatest of solvent actions, the capillary phenomena of aqueous systems the most extensive of capillary phenomena. Again the solubility of carbon dioxide in water is such that it is everywhere evenly distributed between the atmosphere and aqueous liquids. And again the three elements form the greatest number and variety of chemical compounds, enter into the greatest variety of chemical reactions, and involve in these the greatest transformations of energy which are known to chemistry. In establishing the uniqueness of this ensemble of properties all of the general properties of matter, not merely certain particular properties, have been considered. Particular properties have been examined only when they involve the *relation* of water to carbon dioxide or of one of the three elements to the others.[2]

[2] See "The Fitness of the Environment," Chapters III., IV., V., and VI. New York. 1913.

Secondly, it must be understood that the world of physics and chemistry consists exclusively of systems. This was established by Willard Gibbs, and is now one of the recognized postulates of science. Systems, in turn, are made up of phases and components; they are characterized by concentrations and by different forms of activity—especially heat and pressure. Above the sphere of the molecule and below that of the organism science knows nothing else in the world.[3]

Finally, a teleological conclusion, the unique ensemble of properties is uniquely favorable to the existence of systems; it favors number, diversity, and durability of systems, of their phases, components, and activities; and no other elements and compounds even remotely approach such fitness. This conclusion depends upon the evidence of a great variety of phenomena such as the stability of temperature on the earth, the rapidity of the meteorological cycle, the richness and variety of dissolved material in the ocean, the penetration of water into the soil, as well as directly upon some of the unique properties themselves, such as the chemical characteristics of the three elements, and the nature of the transformations of energy which accompany their reactions. Among all the general properties which have been investigated I can not find a single instance of unfitness for systems in general. In short the arrangement of the properties of matter among the elements is such as to make possible the production, in every respect physically intelligible, of much rather than little or of more rather than less in the course of evolution.

Such are the facts: I will add one opinion. This relationship between the properties of the three elements and the general characteristics of systems appears to be exclusively teleological; for neither of the terms of the relationship is liable to modification in time. As they now are so the elements were originally determined; and systems will be systems as long as mass is mass.

I do not doubt that Professor Warren is quite right in thinking, like every one else, that life would be different in another place. But whether it could use silicon instead of carbon, who shall say? I know, however, what chemists will guess. The fact is that life, if still possible under other conditions, would be restricted by any change that excluded water or carbonic acid from the environment, or any of their peculiar properties from the constitution of these substances and their elements.

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[3] *Loc. cit.*, Chapter VII. "The Functions of an Environment," *Science*, N. S., Vol. XXXIX, pages 524–527 (1914).

REVIEWS AND ABSTRACTS OF LITERATURE

Hauptwerke der Philosophie in original getreuen Neudrucken. Band IV. B. Bolzano's Wissenschaftslehre. Neu herausgegeben von Alois Höfler. Leipzig: Verlag von Felix Meiner, 1914. Erster Band. Pp. xvi + 571.

Bernhard Bolzano's scientific activities represented two important lines of thought, yet he obtained recognition in one only in comparatively recent years and long received but little attention in the other. As a precursor of Cantor in his "Paradoxieen des Unendlichen" and as a pioneer in doctrines more fully developed by Weierstrass, Bolzano has now attained deserved renown.[1] Not so well known, but it would appear, equally meritorious are Bolzano's investigations in logic represented by his *Wissenschaftslehre.* Latterly, this work, too, has been rescued from obscurity and made the basis of study by investigators, notably Pelágyi and Bergmann.[2] The increasing importance which the Wissenschaftslehre is winning for itself, combined with the scarcity of the original treatise, has made a new edition most desirable. It is gratifying, therefore, that a reprint has been undertaken.

The Wissenschaftslehre bears that formal and systematic character which is traditional among European scholars. The first volume consists of an *introduction,* a *fundamental theory,* and the first part of an *elementary theory.* The introduction is concerned with the meaning of a scientific theory and the relation of logic to science. The fundamental theory develops a doctrine of the existence and knowledge of truth. The first part of the elementary theory contains a discussion of representations.

Science, according to Bolzano, is a mere complex of truths irrespective of the order of the latter. These truths do not imply a reference to their knowledge and assumption by individuals; they are not subject to change; in fact, they are non-existential in the sense that they involve no reference to space or time. Science is here taken in an objective sense, or science *in itself.* The Wissenschaftslehre is that science usually termed logic; the task of logic is to provide rules for the analysis of truth as a whole into parts and for the exposition of each part, that is, logic is essentially the theory of scientific exposition. Bolzano suggests that logic might be called *formal* in that it deals only with expressions of the type "Some A are B," which he calls "forms" of propositions. These forms are genera of propositions and are not themselves individual, completely determined propositions; they have undetermined components such as the "A" and "B" in "Some A are B." In a subsequent note (p. 393) Bolzano specifically says that "form" is a mere (p. 247) conjunction of words or signs by means of which a certain kind of representations, propositions, and deductions may be exhibited. The general form of every[3] proposition (p. 380), for

[1] *Cf.* J. T. Merz, "History of European Thought of the Nineteenth Century," Vol. II.: "Development of Mathematical Thought," page 709.

[2] *Cf.* M. Pelágyi, "Kant und Bolzano" Halle, 1902; H. Bergmann, "Das philosophische Werk Bolzanos" Halle, 1909.

[3] Bolzano thus assumes that all propositions are reducible to the subject-predicate form. On this point see Russell, "Principles of Mathematics" page 28, § 33.

example, is "A possesses B." It is clear from Bolzano's description of species and genus (§ 106) and an incidental remark concerning a complex of true propositions (p. 111) that the "form" of propositions is not a proposition, but the designation of a representation with propositions as objects. Bolzano's "form" of propositions seems to parallel[4] Russell's *propositional function.* After considering the formal character of logic Bolzano discusses its independence from other sciences. It is maintained (p. 53) that there are few, if any, independent sciences; in particular, logic is dependent on psychology (pp. 14, 54, 227).

In the fundamental theory Bolzano distinguishes between the proposition as such, as verbal, *i. e.,* its expression by individuals and as mental, *i. e.,* its mere representation in thought. For example, "God is omnipresent" is a true verbal proposition, "a square is round" is a false proposition; but "the round square," "the omnipresent God" are not propositions, but representations (presumably of propositions; *cf.* "that which is round and square") and are neither false nor true. Bolzano remarks (p. 79) that the distinction between a proposition as such and its representation, between a thing and its concept, is necessary to avoid errors. As an illustration he cites "What I now say is false" as a false proposition whose subject is not a proposition, but a representation of a proposition. The latter proposition, he observes, is one of a class of propositions whose subject or predicate involves a reference to the propositions themselves or some one of their components (*cf.* pp. 75, 222, 265) so that a modification of their predicate induces a modification of their subject. Such propositions may have the further property that their contradictory opposite is not obtainable by prefixing "not" to their predicate; to give another illustration, "the number of words in this sentence is ten" and "the number of words in this sentence is not ten" are both false propositions. To return to Bolzano's general exposition: propositions *in themselves* are assertions (pp. 77, 115) of truth or falsehood irrespective of verbal expression or of mental representation (p. 78). Between the constituent representations in a proposition there is a relation (p. 97). Subordinate to the concept "proposition in itself" is the concept "truth in itself": all truths in themselves are propositions in themselves. By a truth in itself is meant a proposition which "asserts something as it really is." The words in this definition have a technical signification of which Bolzano believes he takes sufficient account by remarking that for a truth in itself it is undetermined whether the proposition is thought or verbally expressed (p. 115). Truths in themselves are, for example, the truths of religion, ethics, mathematics, and metaphysics (p. 113). Such truths must be carefully distinguished from known truths. Bolzano bases this distinction on the principle that two concepts may be convertible and yet distinct. Thus all truths in themselves are known by God, since God is omniscient, and are, therefore, known truths: but the concept of a known truth is distinct from the concept of a truth in itself.

[4] Russell indeed states (*loc. cit.*, page 13) explicitly: "A propositional function is, as it were, a schematic form standing for any one of a whole class of propositions." The remarks of Bergmann (*loc. cit.*, page 87) will be found suggestive in this connection, but should be read with caution.

The distinction in question is analogous to the difference between two equivalent definitions of a line in geometry or presumably the difference between cardinal and ordinal numbers in arithmetic, etc. Historically, the concepts "proposition in itself" and "truth in itself" may be traced to Leibniz, among others (pp. 85, 120).

In the first part of the elementary theory Bolzano defines "representations in themselves" (*cf.* § 56, p. 244) and gives an elaborate classification of these concepts. "Proposition in itself" and "representation in itself" are mutually exclusive; however, part of a representation may be a proposition, and conversely representations have the (characteristic) property that they are, or may be, parts of propositions (pp. 221, 238). In particular, then, anything that may be made the subject of a proposition is a representation. Any word designates a representation in itself, and if the former is unambiguous, the latter is unique (pp. 217, 218). Bolzano's classification of representations is made first with regard to those internal qualities (*Beschaffenheiten*) or *properties* which are possessed by representations without reference to other objects and second with respect to those external qualities or *relations* of which the contrary is valid. The first basis of classification leads Bolzano to discuss simple and complex, concrete and abstract, real and imaginary representations. Representations in themselves may or may not refer to an object. The object of a representation is distinct from the latter. In illustration, Bolzano states: the representations "nothing" and "round square" have no objects; the representation "this A" in an immediate sense (§ 59) has but one object; "integer lying between one and ten" has a finite number of objects and the representation "line" has an infinite number of objects. Simple representations having but one object are called *perceptions* (pp. 327, 328); representations which are not perceptions, wholly or in part, are called *conceptions* (p. 330). In § 79 a digression is made dealing with the perceptual and conceptual aspects of space and time (*cf.* p. 370). In general, representations having at least one object have a *domain,* which is described (pp. 297, 298) as that property of a representation possessing objects in virtue of which it represents these and no others. The domain of each representation is unique; a representation with no object (§ 67) may be said to have an empty domain. If the domain of a complex representation remains invariant when parts of the representation are removed, the representation is said to be redundant (§ 69). In close connection with the redundancy of a representation is Bolzano's (functional) conception of the variability of a representation as dependent on an independent variable, that is, the derivation of new representations from a given representation by replacing some constituent of the given representation with *arbitrary* representations (p. 314). This quasi-functional character of a representation allows Bolzano to extend (p. 311) the conception of redundancy to representations with no object, *e. g.,* imaginary representations. Thus "a round and four cornered square" might be considered redundant with reference to the constituent "four cornered" since the representation in question yields properly redundant representations by the suitable substitutions of representations for "round."

An important property of the domain of a representation is its *extension* (§§ 66, 93) which is a magnitude (*cf.* § 87). If a representation has a finite number of objects the extension of its domain may be determined absolutely by the individual specification (enumeration) of these objects. In the case of an infinite number of objects the extension can be determined only incompletely[5] and relatively, that is, by comparison with the extension of other infinite domains: by specifying that the domain of the representation A has the same extension as the domain of the representation B, or the domain of A is part of the domain of B, etc. (p. 299; *cf.* §§ 87, 93). Here Bolzano is in touch with his "Paradoxieen des Unendlichen." In fact the extension of a domain through its underlying principle stated by Bolzano (pp. 302, 303) anticipates[6] a standard conception of the modern theory of assemblages. The domain of a representation in its purely logical aspect, moreover, is itself of the highest importance and has been dwelt upon by recent writers, though in a manner distinctly inferior to Bolzano's exposition.

Before proceeding to the second basis of classification of representations, Bolzano describes representations of property and relation (§ 80). If a whole consisting of parts has a quality which is distinct from the quality of each part, then the quality possessed by the whole is a *relation* between the parts. The relation is, further, a function, as it were, of related variables, the latter being restricted to objects of the same kind (p. 381). Clearly, the preceding conception of relation is opposed to the view of the neo-realists such as G. E. Moore and others. However, Bolzano calls relations external qualities; and non-external or internal qualities are called properties. He distinguishes between symmetrical and unsymmetrical relations and discusses the possibility of a relation between an object and itself (p. 384). In the concluding two chapters, Bolzano compares representations first, with reference to relations between themselves, and second, with reference to their relations to other objects. Perhaps the most interesting relations discussed are those of extension (§ 93), convertibility (§ 96), inconsistency[7] (§ 103, *cf.* pp. 480, 509), and opposition (§ 107). Analogous to the generalization of the concept redundancy (§ 69) Bolzano generalizes convertibility and other relations so as to apply to representations having no objects (§ 108). In § 109 (*cf.* § 55) a kind of correspondence between true and false propositions, and "correct" and "incorrect" representations is established.

These are the prominent features of the first volume of the Wissenschaftslehre. The work abounds with valuable historical references and throughout his discussion Bolzano has endeavored to illustrate his arguments with examples from elementary mathematics. Apparently Bolzano

[5] From the above remarks of Bolzano it would seem that Russell is wrong when he says ("Principles of Mathematics," page 70) that Bolzano did not recognize the impracticability of applying enumeration to infinite systems.

[6] *Cf.* the Borel-Lebesgue "measure" of an assemblage; Hobson, "Theory of Functions of a Real Variable," § 81.

[7] *Cf.* Royce, *Transactions of the American Mathematical Society*, 1905, pages 359, 365, etc.

was guided to a considerable degree by mathematical conceptions, attempting to bring into logic the precision and standardization[8] of deductive mathematics. Some of Bolzano's illustrations, however, emphasize the incompleteness of mathematical science in his time; for example, his interpretation of $\sqrt{-1}$ as an imaginary representation, on a par with a round square, presents a problem which has since been solved by the general theory of complex numbers.

It has been said that Bolzano's Wissenschaftslehre prepared the way for a "phenomenological" method in logic and the theory of knowledge. From this point of view, a comparison of the Wissenschaftslehre with Husserl's "Logische Untersuchungen"[9] and Meinong's "Gegenstandstheorie"[10] facilitates an insight into these authors. It is instructive also to study Bolzano's work in its points of contact with Russell's "Principles of Mathematics." Although Russell has commented on the excellence of the "Paradoxieen des Unendlichen" it is strange that he does not seem explicitly to mention the Wissenschaftslehre in his book. Much of the ingenuity shown by Russell in discussing such problems as *meaning* and *denoting, propositional concept* (logical subject, verbal noun, and *proposition, whole* and *part, conceptual* and *real analysis* will be found to be characteristic of Bolzano. Striking differences between the two authors are contained in their views of the relevance of psychology to logic, the nature of relation, and the theory of subject and predicate. Russell,[11] has compared his doctrines with those of Frege. We are enabled to infer resemblances between Frege and Bolzano by means of the interesting controversy the former author has had with Korselt in the "Jahresbericht der Deutschen Mathematiker Vereinigung."[12]

A few words concerning Bolzano's historical importance may be added. It is doubtful whether Bolzano is the successor of Leibniz, as has been suggested. Nevertheless, he deserves to be associated with Leibniz and also Descartes, inasmuch as those great thinkers devoted themselves both to philosophy and mathematics without unfavorable discrimination and thus occupied a position which seems certain of a vigorous revival and promises to be of extraordinary fecundity for both disciplines.

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What Ought I to Do? An Inquiry into the Nature and Kinds of Virtue and into the Sanctions, Aims, and Values of the Moral Life. GEORGE TRUMBULL LADD. New York: Longmans, Green and Company. 1915. Pp. 311.

This work is the second in a series of four volumes addressed rather to the larger educated public than to students of philosophy in the more restricted and technical sense. The first volume dealt with the problem

[8] See, for instance, Bolzano, *loc. cit.*, page 509.

[9] *Cf.* Vol. II., page 7; Vol. I., page 227.

[10] *Cf.* the review by Professor Perry, this JOURNAL, Vol. XII., pages 301–305.

[11] *Loc. cit.*, pages vi, 501.

[12] Vol. 12 (1903), 15 (1906), 17 (1908).

of knowledge, and volumes are to follow upon the problem of faith—whether scientific, social, or religious; and in answer to a closely related problem—"What may I hope?"

At a time when moral values appear to many to be uncertain and insecure, and when a misty haze surrounds many if not most of the attempts to harmonize an acute social consciousness which has not precisely inquired as to what it means by society, with the claims of a strident individualism, we have become more modest in what we expect from such a book as this. Theoretically the volume does not throw much new light upon the problem of morals, but it has the practical value of insisting at this time upon the dignity of the individual life of virtue, as carrying with it its own sufficient value and sanction, and incidentally as the one efficient remedy for some of the evils of the day.

The first volume of the series was entitled, "What Can I Know?" The author states that the most conspicuous difference between the answer to that question and that to the question, "What ought I to do?" lies, not in the distinction between "knowing" and "doing," but rather in the distinction between "can" and "ought." Knowing is a kind of doing, and "high class, conscious doing" involves a large measure of cognitive activity. So the inquiry turns to the question of "oughtness," in which is involved conspicuously the distinction between the fact-that-is, and the idea-of-what-ought-to-be.

This distinction does not here yield the fruit which it might have yielded. The thought suggests itself that there is another great class of activity which is a kind of "doing" of a very conscious nature, and which distinguishes between a fact-that-is and an idea-of-what-might-be. In the relationship of the idea-of-what-ought-to-be of morals to the idea-of-what-might-be of creative art, if we may use the analogous term here for want of a better, there might be material for a fruitful inquiry into the nature of "oughtness."

The course of the author's inquiry leads elsewhere, however. "Oughtness" lies, not in an objective norm, but it is rather an obligation imposed from within by individual personality itself, and it is indeed one of the unique prerogatives incident to the ideal and promise of personality. The obligation to avoid certain kinds of conduct toward animals and things lies not in the things or animals, but rather in the obligation of personality to be true to its ideal of itself. The sense of moral obligation is, therefore, individual, or personal, but the content of the obligation is social in its origin. This moral instinct is, moreover, of the most important social significance "in securing a certain moral solidarity to the race." The consciousness of clash in modern society between personal and social claims upon conduct, which motivated so much of the literature of a decade just past, has enforced upon a science of conduct the necessity of attempting to find some principle in which the individual and the social claims may be harmonized. This fact is indicated in the drift of the writer's thought.

Again the parallel between the problem involved and that of artistic creation suggests itself. Obviously the idea-of-what-ought-to-be involves

the lives and fortunes and happiness of others in a way in which the idea-of-what-might-be of the artist is not taken generally to involve them. Moreover this proposition has a corollary in the fact that the so-called artistic temperament considers itself to be free from obligation to its fellows in a way which does not accord with our usual standards. If moral personality aims to create what ought to be, what relationship has its ideal to that of the artist, and does the solution of this problem throw any light upon the deeper social significance of morals as compared with the more individualistic significance of Art?

From the inquiry into the nature of "oughtness" and its individual and social significance, the volume proceeds to treat of more practical aspects of the problem—the separate virtues, whether there be any one comprehensive, all-including virtue, etc. The practical value of an habitual regard for all that is comprehended in the ideal of a good man, and the setting of this as the commanding task of individual life—the becoming that one good man whom I, with my particular talents and opportunities, may become; this and the fact that the being good is its own sufficient reason and reward, represent the drift of the argument in its application to individual, practical problems of conduct.

A final chapter is devoted to the relation between religion and morals. It becomes continually more evident as one reads this volume that for the writer the religious aims and sanctions and the moral aims and sanctions are in the last analysis one. When he attempts to answer the question as to whether there be one only virtue it becomes plain that, for him, if the virtues may be at all summed up in one command it is, "Be ye perfect as true sons of God." However, he seems unwilling to commit himself to a conclusion that the aims and sanctions of the moral life take their social beginning in religion, and find in it the inspiration which makes it possible for them to transcend themselves and set new and higher standards. In fact he does not commit himself to any more sweeping conclusion than this, that religion strengthens and supports the sanctions of moral life, and gives eternity to the values which it establishes, more particularly in so far as they can be identified with a world ground which is moral to the core. He hesitates to hint even, though he quotes Wundt somewhat to that effect (p. 283), that the social ideal, with its religious correlate, the Kingdom of Heaven, and moral ideals in general, have their origin in the religious consciousness.

Here again we are reminded that the parallel before suggested with creative art might be suggestive. There is certainly much in the religious phenomenon in so far as we know it which raises the question as to whether or not religion creates models and ideals of conduct in the sense that for Kant genius creates concrete embodiments of beauty, from which ethics formulates, or attempts to formulate, an internally consistent system, somewhat as the philosophical critic of art formulates canons or principles of criticism as based upon the works of artistic genius.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. December, 1915. *Le Pancalisme* (pp. 481–512): A. LALANDE. – A discussion of J. M. Baldwin's "Pancalism" and its thesis of the "beautiful" as the "center of values." *La Forme et la Pensée musicales* (pp. 513–536): LIONEL DAURIAC. – The writer compares and contrasts "musical" language and thought with ordinary language and thought, but refrains from committing himself to a positive conclusion. *De la nature et de la valeur des explications* (second and final article, pp. 537–565): G. FONSEGRIVE. – Philosophical explanations have a double sort of value: "first a practical value, independent of all value of verity, and next a value just as verity." "No one can prove dialectically the ontological value of thought, but no more can any one prove its non-value without in some fashion presupposing its value." *Revue Critique.* Morton Prince, *The Unconscious:* L. DUGAS. *Notices bibliographiques.* Sturt, *The Principles of Understanding:* LIONEL DAURIAC. Ingegnieros, *Criminologia:* GASTON RICHARD. *Revue des Périodiques.*

MIND. January, 1916. *Kant's View of Metaphysics* (pp. 1–24): ARCHIBALD A. BOWMAN. – Kant's denial of metaphysics is considered with respect to the critical and the pre-critical periods. The pre-critical writings, as is shown by a detailed examination of the "Dissertation" and the much debated "Lectures," do not contain a denial of metaphysics. The main point is that what appears as *metaphysics* in the pre-critical writings, reappears as the *metaphysical* in the critical period. Metaphysics is an integral part of criticism, and the criticism of the pure reason is a part of metaphysics. *The Foundations of Character* (pp. 25–41): W. R. BOYCE GIBSON. – A detailed exposition and review, largely sympathetic, of Mr. Shand's book, "The Foundations of Character." The emotion of joy and its relation to desire is singled out for special consideration, the conclusion being that joy is not intrinsically antagonistic to desire, as is held by Mr. Shand. *The Flying Arrow: An Anachronism* (pp. 42–55): PHILIP E. B. JOURDAIN. – "The first part of this article contains an attempt at an interpretation of Zeno's arguments about motion, together with a criticism of many former interpretations. The author's view is that all four arguments are directed against the belief held by most people of that time (including the Pythagoreans and Empedocles), and still always held by unsophisticated people, that lines are made up of points." *The Plot of Plato's Republic.* (I) (pp. 56–82): P. S. BURRELL. – The impression given by Mr. Lindsay in the Introduction to his translation to the "Republic" is that "there is no subject or plot" to the "Republic." The writer proceeds from the standpoint both of method and of subject-matter to a detailed analysis of the "Republic." This paper is concerned with the relation of Book I to the rest of the dialogue. Its purpose is "to raise the problem, to state the chief questions and to discuss them in a preliminary way." *Discussions: The Universal and the A Fortiori:* CHAS. A. MERCIER. *Casuality and Implication:* BERNARD BOSANQUET. *The Indetermination of Meanings:* ALFRED SIDGWICK. *Critical Notes:* Dr. Max

Brod and Dr. Felix Weltsch, *Anschauung und Begriff. Grundzüge eines Systems der Begriffsbildung:* HENRY J. WATT. Émile Boutroux, *Certitude et Vérité:* F. C. S. SCHILLER. *New Books. Philosophical Periodicals. Notes and News.*

Barton, Wilfred M. Manual of Vital Function Testing Methods and their Interpretation. Boston: Richard G. Badger, 1916. Pp. 255. $1.50.

Die Philosophie der Gegenwart. Ed. by Arnold Ruge. Volume V. Heidelberg: Weiss'sche Universitätsbuchhandlung, 1915. Pp. xii + 290.

Gates, Arthur I. Variations in Efficiency during the Day, together with Practise Effects, Sex Differences, and Correlations. University of California Publications in Psychology. Volume 2, No. 1. Berkeley: University of California Press, 1916. Pp. 156.

Gates, Arthur I. Diurnal Variations in Memory and Association. University of California Publications in Psychology. Volume 1, No. 5. Berkeley: University of California Press, 1916. Pp. 323–344.

NOTES AND NEWS

IN an article by Edwin Guthrie, entitled, "The Field of Logic," this JOURNAL, Volume XIII, lines 4 to 9 of the first paragraph on page 157 should read as follows: What final authority would judge between the ultimate "correctness" of Aristotle's logic which offers two contradictories obeying the laws: $x \cdot x' = 0$, $x + x' = 1$, $(x')' = x$, and a logic which would provide three contradictories obeying the laws: $x \cdot x' \cdot x'' = 0$, $x + x' + x'' = 1$, $(x')' = x''$, $(x'')' = x$?

A NEW magazine, *The Journal of Experimental Psychology,* has been added to the *Psychological Review Publications.* This journal is to appear under the editorial care of Professor John B. Watson, of Johns Hopkins University, and will be issued bi-monthly.

DR. RAYMOND DODGE, professor of psychology in Wesleyan University, has been appointed by the trustees of Columbia University to be Ernest Kempton Adams research fellow for the academic year 1916–1917.

PROFESSORS GILBERT MURRAY, of Oxford University, and Paul Shorey, of the University of Chicago, will each give a series of lectures at Columbia University Summer School in the department of classical philology.

UNDER the retiring clause in the faculty regulations of Leland Stanford University, Dr. Lillian Jane Martin has been made professor emeritus of psychology.

DR. ALBERT BALZ has been promoted from assistant professor to associate professor of philosophy at the University of Virginia.